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Inhomogeneous flows of non-Newtonian fluids: generation of spatial concentration gradients **5** (1979) 449
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A comparative experimental study of the isothermal shear and uniaxial elongational rheological properties of low-density, high-density and linear low-density polyethylenes **19** (1986) 251
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Instability phenomena in tubular film, and melt spinning of rheologically characterized high-density, low-density and linear low-density polyethylenes **19** (1986) 275
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Multiaxial elongational flow of sheets and annular cylinders: growth of disturbances **11** (1982) 127
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Entrance effect in capillary flow of dilute and semi-dilute polymer solutions **5** (1979) 463
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Fast squeezing flow of viscoelastic fluids **9** (1981) 157
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Possibility of a master plot for material functions of high-density polymer solutions **13** (1983) 365
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Unsteady-state development of plane Couette flow for viscoelastic fluids **12** (1983) 135
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Structural viscosity of electrorheological fluids **42** (1992) 213
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Rheological models of rubber carbon-black compounds: low interaction viscoelastic models and high interaction thixotropic plastic viscoelastic models **49** (1993) 277
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Rheological behaviour of rubber carbon-black compounds in various shear-flow histories **28** (1988) 183
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An experimental test of equations predicting the load bearing capacity of squeeze films of elastico-viscous liquid **7** (1980) 369
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Definitive load-enhancement effects by polymer thickened oils in a squeeze film experiment **9** (1981) 257
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High shear rate normal stress measurement for hot, polymer thickened oils using the jet thrust method **8** (1981) 177
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Load enhancement and friction reduction effects by polymer thickened oils lubricating externally sliding cylinders **21** (1986) 39
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External near contact of sliding cylinders: polymer solutions give increased load and reduced friction coefficient **12** (1983) 269
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Rheo-optics of shear and elongational flow of liquid crystalline polymer solutions: Hydroypropyl cellulose/water and poly-p-phenylene terephthalamide/sulfuric acid **7** (1980) 121
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Extensional rheometry of fluid S1 **52** (1994) 153
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Rheological behavior of silica suspensions flocculated by bridging **24** (1987) 265
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A model of dilute polymer solutions with hydrodynamic interaction and finite extensibility. 1. Basic equations and series expansions **26** (1987) 207
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Exact solution of the Rouse model with discrete time evolution **19** (1986) 357
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Series expansions for shear-flow properties from the Doi–Edwards model **37** (1990) 265
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Renormalization group calculation of viscometric functions based on conventional polymer kinetic theory **33** (1989) 53
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Influence of the contraction ratio in elongational flow of polymer solutions **11** (1982) 341
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Characteristics of HPAM dilute polymer solutions in three elongational flow situations **7** (1980) 315
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A spectral domain decomposition method for the planar non-Newtonian stick slip problem **41** (1991) 43
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Separation and reattachment of non-Newtonian fluid flows in a sudden expansion pipe **37** (1990) 175
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Turbulent hydrodynamic behaviour of a drag reducing viscoelastic fluid in a sudden expansion pipe **39** (1991) 353
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Sausage instability of a thread in a matrix: linear theory for viscoelastic fluids and interface **40** (1991) 289
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A finite element method for liquid with memory **22** (1987) 271
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Bubble growth and collapse in viscoelastic liquids analyzed **16** (1984) 53
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Isothermal extrusion of non-dilute fibre suspensions **25** (1987) 313
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Numerical simulation of circular entry flows of fluid M1 using an integral constitutive equation **42** (1992) 301
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Numerical simulation in converging channel flow of the fluid M1 using an integral constitutive equation **52** (1994) 69
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Nonlinear hydrodynamic stability of viscoelastic fluids heated from below **60** (1995) 1
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Steady shear viscosity measurements of viscoelastic fluids with the falling needle viscometer **34** (1990) 351
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Dynamics of rigid and flexible polymer chains in confined geometries. 1. Steady simple shear flow **15** (1984) 309
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Dynamics of rigid dumbbells in confined geometries. 2. Time-dependent shear flow **18** (1985) 111
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Dynamics of non-Newtonian fluid interfaces in a porous medium: compressible fluids **28** (1988) 227
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Report on University of Wales Institute of Non Newtonian Fluid Mechanics minisymposium on continuum and microstructural modeling in

computational rheology: Seiont Manor, Gwynedd, 11–12 April 1994 **55** (1994) 203
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Stretching flows for thin film prodution. 1. Bubble blowing in the solid phase **4** (1978) 57
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Non-isothermal rheology of polymers and its significance in polymer processing **6** (1979) 81
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A possibility for an anomalously high rate of dissolution in films of non-Newtonian liquids with short contact times **3** (1978) 389
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On the existence of an anomalously high dissolution rate in films of non-Newtonian liquids with short contact times **8** (1981) 319
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Peng, S.T.J. and Landel, R.F.
Rheological behaviour of fm-9 solutions and correlation with flammability test results and interpretations **12** (1983) 95
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Draining non-Newtonian films. 1. The numerical simulation of a generalized Newtonian liquid draining down a vertical surface **37** (1990) 201
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Turbulent pipe-flow characteristics of low-molecular weight polymer solutions **55** (1994) 321
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Long range memory effects in flows involving abrupt changes in geometry. 1. Flows associated with L- shaped and T-shaped geometries **2** (1977) 49
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Long range memory effects in flows involving abrupt changes in geometry. 2. The expansion/contraction/expansion problem **2** (1977) 191
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